

1st International Workshop on Doping Semiconductor Nanostructures

Washington DC, 9–11 January 2006

MONDAY MORNING

08:00 *BUS DEPARTS FROM HOTEL*

08:30 *REGISTRATION AT NRL, BUILDING 226*

Welcome and introductory remarks

09:15 Richard Colton (NRL) & Alexander Efros (NRL)

Nanocrystals with electrons & holes — Arthur Nozik (National Renewable Energy Lab), chair

09:30 Philippe Guyot-Sionnest (University of Chicago) “Charged colloidal quantum dots”

10:10 Celso de Mello Donega (Utrecht University, Netherlands) “Probing the wavefunction of dopants in ZnO nanocrystals”

10:50 *COFFEE BREAK*

Doping superlattices — David Norris (University of Minnesota), chair

11:20 Christopher Murray (IBM) “Doping nanocrystal superlattices”

12:00 *LUNCH*

MONDAY AFTERNOON

Nanowire heterostructures — Pehr Pehrsson (NRL), chair

13:30 Charles Lieber (Harvard University) “Doping and the electronic properties of single-component, axially modulated, and core/shell radial-heterostructure nanowires”

14:10 Gyu-Chul Yi (Pohang University, Korea) “ZnO nanorods and heterostructures”

14:50 *COFFEE BREAK*

Phosphors — Ramesh Bhargava (Nanocrystals Technology), chair

15:10 Jeffrey Gerbec (Mitsubishi Chemical Corporation) “Doped nanophosphors: an industrial perspective”

15:50 Jeff Coffer (Texas Christian University) “Erbium-doped group-IV nanocrystals and nanowires: photophysical and structural impact of rare-earth location”

16:45 *BUS DEPARTS FOR HOTEL*

17:30 *POSTER SESSION AND RECEPTION AT HOTEL*

MONDAY EVENING

17:30–20:00 Poster session at Radisson Hotel

- Matt Beard (National Renewable Energy Lab) “Novel carrier processes in lead-salt quantum dots and quantum-dot arrays: multiple exciton generation, charge separation, and transport”
- Daniel Gamelin (University of Washington) “Magneto-optical spectroscopic studies of colloidal diluted-magnetic-semiconductor quantum dots”
- Sergei Ivanov (Los Alamos National Lab) “Single-exciton amplified spontaneous emission in heterostructured core/shell semiconductor quantum dots”
- Masaru Kuno (Notre Dame University) “Synthesis, characterization, and optical properties of solution-grown, quantum-confined, semiconductor nanowires”
- William Liu (University of Washington) “Transition-metal doped oxide semiconductors: synthesis, characterization, and activation of high-Tc ferromagnetism”
- Xiaogang Peng (University of Arkansas) “Targeted doping of semiconductor nanocrystals”
- Jeff Peterson (University of Rochester) “Fluorescence from individual lead-sulfide quantum dots”
- Andrew Shabaev (NRL) “Optical properties of semiconductor nanorods”
- Blake Simpkins (NRL) “Electronic conduction in GaN nanowires”
- Terry Tritt (Clemson University) “Composite thermoelectric materials using nanoscale precursors”
- Qian Wang (Virginia Commonwealth University) “Structure and magnetic properties of Cr-doped GaN nanotubes”
- Jinkyong Yoo (Pohang University, Korea) “Doping of Al and Ga in ZnO nanorods”
- Lijun Zu (University of Minnesota) “The impact of ripening on manganese-doped ZnSe nanocrystals”

TUESDAY MORNING

08:00 *BUS DEPARTS FROM HOTEL*

Optical properties — James Merz (University of Notre Dame), chair

09:00 Aleksey Ekimov (Ioffe Institute & Nanocrystals Technology) “Size effects in photoluminescence of doped nanocrystals”

09:40 Minoru Fujii (Kobe University, Japan) “Optical properties of impurity-doped Si nanocrystals”

10:20 *COFFEE BREAK*

Dilute magnetic semiconductors — Xiaogang Peng (University of Arkansas), chair

10:40 Daniel Gamelin (University of Washington) “Synthesis, spectroscopy, and physical properties of nanocrystalline oxide diluted magnetic semiconductors related to spintronics”

11:20 Brian Korgel (University of Texas-Austin) “Colloidal Mn-doped InAs and InP nanocrystals”

12:00 *LUNCH*

TUESDAY AFTERNOON

Magnetic interactions — Berry Jonker (NRL), chair

13:30 James Chelikowsky (University of Texas-Austin) “Magnetic properties of Mn-doped semiconductor nanocrystals”

14:10 Geoffrey Strouse (Florida State University) “Turning on ferromagnetic exchange in doped nanocrystals”

14:50 *COFFEE BREAK*

Surface chemistry — Tom Reinecke (NRL), chair

15:20 Michael Steigerwald (Columbia University) “Low-temperature organometallic preparations of metal-oxide and metal-chalcogenide nanostructures”

16:00 Steven Erwin (NRL) “Doping semiconductor nanocrystals: the role of surface adsorption”

17:00 *BUS DEPARTS FOR HOTEL*

WEDNESDAY MORNING

08:00 *BUS DEPARTS FROM HOTEL*

New nanostructure doping methods — Masaru Kuno (University of Notre Dame), chair

09:00 Liberato Manna (National Nanotechnology Lab, Italy) “Growth of elaborate nanocrystal structures: new synthetic approaches and computational support”

09:40 Richard Robinson (University of California-Berkeley) “Creation of nanocrystal heterostructures through partial cation exchange”

10:20 Lincoln Lauhon (Northwestern University) “Three-dimensional composition mapping of semiconductor nanowires using atom-probe tomography”

11:00 *COFFEE BREAK*

Closing remarks and departure

11:15 David Norris (University of Minnesota) and Tom Kennedy (NRL)

11:45 *BUS DEPARTS FOR HOTEL*